

Tentative Program

1. Synthesis and Metabolism of Cytokines - Moderator B.A. Beutler MD.

- a) Tumor Necrosis Factor - B.A. Beutler M.D.
- b) Interleukins and Interferons
- c) Colony Stimulating Factors
- d) Nitric Oxide-

The objective of this session is to present an overview of existing information and new, unpublished findings relating to the synthesis, secretion, metabolism and control of (regulation of) Tumor Necrosis Factor, Interleukins and Interferons, Colony Stimulating Factors and Nitric Oxide. Emphasis should be placed on newer concepts related to the synthesis and release of these cytokines and the factors regulating cellular secretion.

2. Cytokines and Cell Signaling. D. V. Goeddel, Genentech, Inc. South San Francisco, CA and J. Spitzer Ph.D., New Orleans LA..

- a) Tumor Necrosis Factor and Interleukins
- b) Interferons and Colony Stimulating Factors
- c) Nitric Oxide

The objective of this session is to present an overview of existing information and new, unpublished findings relating to the mechanism by which the cytokines mediate their inflammatory and anti-inflammatory actions. The effect of Tumor Necrosis Factor, Interleukins and Interferons, Colony Stimulating Factors and Nitric Oxide on calcium ion, protein kinase A, C and D, cyclic nucleotides and other second messengers will be emphasized as well as newer concepts relating to the action of the cytokines.

3. Cytokines and Modulation of Lung Function: Moderators: Peter J. Barnes MD and Stan Greenberg Ph.D.

- a) Terry Burke Wolin Ph.D. - Cytokines, Nitric Oxide and Airway Smooth Muscle
- b) Stan Greenberg-Ph.D. Cytokines and Pulmonary Vascular Function
- c) Phillip J. Kadowitz Ph.D. Effect of Cytokines on Pulmonary and Airway Dynamics
- d) Kenneth Brigham MD - Cytokines and Lung Permeability

The objective of this session is to present an overview of existing information and new, unpublished findings relating to the effects of cytokines on airway and pulmonary vascular permeability, contractility and tone. The effects of cytokines, including nitric oxide, on airway and blood vessel epithelium, endothelium and smooth muscle function will be described and the mechanism of their effects examined. This will include the site of production of the cytokines, the manner in which they signal their response to the target cells and the response of the target cells to these signals. The effect of the cytokines on whole lung and airway hemodynamics and lung vascular permeability will then be examined. This session will provide information on the effects of cytokines on the function of the lung and its constituent tissues as it relates to lung function, gas exchange and perfusion.

4. Cytokines and Resistance to Lung Infection-Warren R. Summer MD

a)

b)

c)

The objective of this session is to present an overview of existing information and new, unpublished findings relating to the role of cytokines in preventing infections and conferring resistance to pneumocystis, tuberculosis and related diseases. The role of TNF, interleukins, interferon gamma, colony stimulating factors and nitric oxide as essential mediators of resistance will be examined. The question of the necessity of nitric oxide and superoxide production for killing of tuberculosis and pneumocystis will be examined. The mechanism by which the cytokines act as anti-infection agents will also be explored.

5. Cytokines and Sepsis Moderators: Steve Nelson MD and Greg Bagby Ph.D.

a)

b)

c) Interleukins in Shock - C. Libert, Laboratory of Molecular Biology, Ghent Belgium.

d)

The objective of this session is to evaluate the role of specific cytokines as mediators of pulmonary involvement in sepsis and shock. The compartmentation of TNF within the lung in airborne infections will be examined. We will attempt to determine the role of specific cytokines as mediators of lung injury in sepsis. The role of colony stimulating factors as mediators of TNF release will be examined. In addition, the role of nitric oxide in the lung in sepsis will also be explored. Finally the interrelationship between the different

cytokines and their effects on pulmonary function in sepsis will be examined.

6. Cytokines and Asthma-Moderator: Dr. Barry Borish National Jewish Hospital, Denver and Dr. J. Trandiel, Service de Pneumonologie, Hospital Saint-Louis, Paris France

- a) Biochemistry of Asthma- Peter J. Barnes MD
- b) Eosinophils and Asthma- Jerry Nadel MD
- c) Cytokines and Asthma-Dr. Barry Borish MD
- d) TNF and asthma-Dr. J. Trandiel

The objective of this session is to evaluate the role of specific cytokines as mediators of asthma. Asthma is a diverse disease of multifactorial origin. The roles of leukotrienes and platelet activating factor, interleukins, tumor necrosis factor and nitric oxide as mediators of asthma will be examined. The role of individual factors, cytokine cascades and epithelium-derived factors as mediators of airway hypersensitivity and bronchial sensitivity will be examined. Included within this session will be the mechanism by which the cytokines may promote the asthmatic process.

7. Cytokines in AIDS and Lung Cancer: Moderators: Dr. R. Swindell, CRC, Department of Medical Oncology, Christie Hospital, Manchester, England, United Kingdom and Dr. Catherine C. Bansbach Wyeth-Ayerst Research, New Jersey.

The objective of this session is to evaluate the role of specific cytokines as mediators and suppressants of lung carcinoma and lung involvement in AIDS. The role of TNF and interleukins as modulators of the metastases of lung cancers will be examined. The mechanism of their effects will be explored. The role of nitric oxide as an antiproliferative agent and suppressor of carcinogenic changes in cells will also be examined. The role of cytokine and their deficiency as agents causal to the sequelae of AIDS will be examined.

8. Control of Lung Disease with Cytokine Antibodies and Receptor Antagonists I.

Moderators Dr. G. Soma, Teikyo Univ. Kawasaki Japan.

- a) TNF and IL-1 antagonists in immunopathological reactions. P.T. Piguet Centre Med. Univ. of Geneva, Geneva, Switzerland
- b) IL-5 Antibodies and modulation of bronchial eosinophilia. Dr. N. Chand Wallace Research Labs, Cranbury, NJ
- c) Pentoxifylline and analogs as antagonists of cytokines in severe pulmonary diseases. Dr. P. Zabel Med. Klinik Forschungsinstitut, Borstel F.R.G.

9. Control of Lung Disease with Cytokines, Antibodies and Receptor Antagonists II.

Moderators Dr. P. Zabel Med. Klinik Forschungsinstitut, Borstel F.R.G

a) Granulocyte colony stimulating factor to prevent lung infection in immunosuppressed animals and man. Jeffrey Andresan Ph.D., Amgen, Inc.

b) Tumor Necrosis Factor Mediates the antitumor efficacy of IL-2. J.A. Norton, National Cancer Institute, Bethesda MD.

c) Therapy with LPS of small molecular size in Lung Cancer. G. Soma, Teikyo Univ., Kawasaki, Japan.

The objective of these sessions is to evaluate the state of the art in the use of specific monoclonal antibodies to cytokines and cytokine receptor antagonists in lung disease. The efficacy and side effects of these antagonists in sepsis, AIDS, lung cancer will be explored. The use of cytokines themselves as modulators of lung disease will also be examined.